

REMARKS

Claims 14-26 have been replaced with new claims 27-42. Claims 27-34 are directed to the subject matter of group I.

The amendments made to the claims obviate the rejection under 35 USC 112, second paragraph.

Claims 14-23 stand rejected under 35 USC 103.

The subject matter of this application, as defined in claim 27, is concerned with a suspension smelting furnace installation comprising a suspension smelting furnace (corresponding to the furnace 15 in the case of the embodiment described with reference to FIG. 1) defining a vertical reaction shaft for roasting and smelting dried concentrates in suspension. A sleeve type or diffusion type concentrate burner (13) is mounted on top of the reaction shaft. A bin (10) has an inlet for receiving a supply of fine-grained material and also has an outlet below the top level of the reaction shaft. A feed control unit (11) receives the fine-grained material from the outlet of the bin and provides the fine-grained material with accurately controlled feed rate. A pneumatic conveyor (12) is positioned to receive the fine-grained material from the feed control unit and is adapted to transport the fine-grained material to the concentrate burner with a feed rate that equals the feed rate at which the fine-grained material is provided by the feed control unit.

The feed control unit ensures that the fine-grained material is supplied to the pneumatic conveyor at a uniform rate and the pneumatic conveyor conveys the fine-grained material to the concentrate burner at a feed rate that is equal to the feed rate provided by the feed control unit. By providing the bin at a location such that its outlet is below the top level of the reaction shaft and employing a pneumatic conveyor for transporting the fine-grained material to the concentrate burner on top of the reaction shaft, the possibility of interruption in feed of the fine-grained material to the concentrate burner is eliminated or at least substantially reduced.

Okamoto et al discloses a process for obtaining metal from metal oxide. In accordance with Okamoto et al, iron ore and coke are supplied to a burner 12 having a nozzle 14 for receiving heavy oil as fuel and also having a nozzle 16 for primary oxygen. The iron ore and coke are supplied to the burner by using air as a carrier gas.

The examiner relies on Frundl et al as rendering it obvious to employ a sleeve type burner as the oxygen burner 12 of Okamoto et al.

The examiner relies on the legend "air 100 Nm³/h" adjacent the outlet of the iron ore bin in FIG. 1 of Okamoto as indicating the presence of a feed control unit for providing feed of fine-grained material with an accurately controlled feed rate. Neither the legend in FIG. 1 nor the description at column 4, lines 50-62 provides any information regarding the rate of supply of iron ore or coke. There is no suggestion in Okamoto et al that supply of iron ore or coke to the air flow is metered in any fashion.

Claim 27 also specifies that the outlet of the bin is below the top level of the reaction shaft. The examiner relies on the schematic illustration in FIG. 1 of Okamoto as disclosing this feature. FIG. 1 of Okamoto et al can no more be relied upon as disclosing the relative location of the outlet of the iron ore or coke bin relative to the furnace 10 than it could be as showing that the iron ore bin is about 6 cm high and 1.8 cm wide. The positioning of components shown in FIG. 1 is dictated by convenience of illustration rather than accurate illustration of relative locations and sizes.

With regard to Frundl, applicant submits that the fact that this reference contains a reference to a sleeve portion 54 at column 5, line 11 does not support the contention that the furnace 10 is a sleeve type burner. In a sleeve type burner, the suspension is formed by virtue of the high feed rate created by a pneumatic conveyor and a central jet cone mechanically enhances the formation of the suspension. The prior art does not suggest that the cupola furnace of Frundl et al should be used as a concentrate burner.

In view of the foregoing, applicant submits that the subject matter of claim 27 is not disclosed or suggested by the cited references, whether taken singly or in

combination. Therefore, claim 27 is patentable and it follows that the dependent claims 28-34 also are patentable.

Respectfully submitted,

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